

Factors Influencing The Acceptance Of Routine Immunization Among Ebira People In Selected Areas Of Ado Ekiti, Ekiti State, Nigeria.

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Abstract:

Background: Despite government actions and policy to scale up routine immunization in Nigeria, the uptake in Nigeria and many Africa nations remains low when compared with more advanced countries. This study aimed at examining factors influencing acceptability of routine immunization among married Ebira women in selected communities of Ekiti State.

Material and Methods: The study is a descriptive research and it employed cross-sectional design. Data was gathered from 361 women who had a minimum of two year-old children as at the time of survey, from selected communities in Ado Local Government such as Erinfun, Ukewo and Ago corner. Ethical approval was sought for from Research and Ethic Committee, Babcock University, Ilishan-Remo Ogun State. In addition, respondents were consented for full participation.

Result: The study found that majority (96%) of the respondents utilized routine immunization for their children. It was also revealed that a substantial number (97%) of husbands accepted the immunization to be administered to their children. Again, place of birth is significant ($\chi^2=15.307$, $p<0.05$) in determining routine utilization. Moreover, husband's support ($\chi^2=39.726$, $p<0.05$) and knowledge about availability of routine immunization at the health centre is statistically significant ($\chi^2=4.127$, $p<0.05$) in influencing the acceptance.

Conclusion: The study concludes that larger number of Ebira women did not only accepted the routine immunization but they also utilized them. The study therefore, recommends that government should continue with the awareness campaign on the importance of routine immunization so that no single mother will be left out. Also, all government and state hospital should ensure that all the immunization commodities should be available and accessible for uptake.

Keywords: Factors, Acceptance, Routine Immunization, Awareness

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I. Introduction

Immunization is one of the core eight elements of Primary Health Care according to the Alma-Ata declaration of 1978, as one of the most effective public health intervention tools to prevent diseases and death (World Health Organization, 2019). The importance of routine immunization cannot be overemphasized. The use of vaccines from infancy boosts immunity which consequently reduces childhood morbidity and mortality. Immunization can be described as a process in which a person is made immune or resistant to a particular communicable disease (WHO, 2019). This is done by administration of vaccine.

Despite the importance of immunization, it continues to be a great concern as a result of coverage, acceptability, willingness to utilization of immunization thus contributing to reduction in infant morbidity and mortality rates. According to Nigeria Demographic Health Surveys, childhood immunization marginally increased from 28% in 2013 to 31% in 2018. Though, there was an improvement in the utilization of immunization, as reported by National Population Commission (2008, 2013 & 2018), nevertheless, the issue of non-acceptance of immunization still remains a problem in Nigeria.

Over 2,000,000 children die annually from vaccine preventable diseases in Nigeria (Oleribe, Kumar, Awosika-Oluomo & Taylor-Robinson, 2017). Some of the preventable diseases are: tetanus, pneumonia, meningitis, hepatitis B, tuberculosis and measles. Adequate vaccination protects children from these vaccine preventable diseases, which can lead to disabilities like blindness, lameness, deafness or death (UNICEF, 2017).

Tagbo, Uleanya, Nwokoye, Eze and Omotowo (2012) reported that despite the fact that vaccines are made free to the populace, acceptance still remains very low.

About two million lives are saved annually due to utilization of immunization services (WHO, 2019). The World Health Organization initiated the Expanded Program on Immunization (EPI) in 1974 to provide countries with guidance and support to improve vaccine delivery and available for all children (Loharikar, Mantel, Burgess, Iskander, Thorpe, & Laird, 2018). The Nigeria's EPI was first initiated in 1979 with a vision of improving the health of children by eradicating the identified six killer childhood diseases including diphtheria, poliomyelitis, measles, tuberculosis, pertussis and tetanus.

However, for the first five years, low national immunization coverage was reported on the targeted people, hence minimal impact on target diseases (Ogundeji, Adeniyi, Osungbade & Arulogun 2014). Between 1985 and 1990, EPI aimed at strengthening immunization by accelerating disease control and introducing new vaccines and relevant technologies and tools. In 1995, Nigeria adopted the World Health Assembly Resolution and the United Nations General Assembly Special Session's goal of eradicating polio in all countries by 2015 (WHO, 2002).

Immunization was recognized as an essential Millennium Development Goals (MDGs) which aimed at reducing deaths among children under five years old (MDG4). It has also been given due recognition in the Sustainable Development Goal 3 (SDG) targeting at ensuring healthy lives and promotion of well-being of people (Buse & Hawkes, 2015). The SDG 2, targets putting an end to preventable deaths of newborn and under 5 years by the year 2030. Also, there has been much progress towards MDG 4, reducing deaths in children under five. While a very large burden remains, the burden of mortality and morbidity has shifted to those infants who die in the first month of life, 44% of all under-5 deaths occur at this time (WHO, 2015).

In Nigeria, the basic routine vaccines administered are; Bacillus Calmette-Guerin (BCG), Oral poliovirus (OPV), Diphtheria, Pertussis, Tetanus toxoid, (DPT) Hepatitis B Vaccine (HBV), Yellow fever and Measles vaccine, then later on some set of new vaccines were introduced which include Haemophilus influenzae-type-B (HiB), pneumococcal conjugate (PCV), Rotavirus, Rubella, inactivated polio (IPV), and Human papillomavirus (HPV). In addition, some other vaccines recommended for targeted childhood use which are; Yellow fever, Japanese encephalitis, Typhoid conjugate, Measles, Meningococcal, cholera and Rabies (Loharikar et al., 2018). Nigeria recently introduced one dose of inactivated poliomyelitis (IPV) in the year 2015 to be taken at 14th week of age, this does not replace the oral polio vaccine but to strengthen a child's immune system and protect against polio, in addition to DPT is hepatitis B (Hep B) and Haemophilus Influenza type B (HIB) which is called DPT-HepB-HIB or pentavalent vaccines which was introduced in 2012 and the third one is a phased rollout of the pneumococcal conjugate vaccine (PCV) in 2014 that protects against *streptococcus pneumoniae* bacteria, which causes severe pneumonia, meningitis and other illnesses. They were all added into the national routine immunization schedule (NPC, 2018).

Globally, 2.5 million children died every year from easily prevented infection diseases (Frieden, 2010). WHO estimates that measles death worldwide fell remarkably by 74% between 2000 and 2007 from 750,000 to 197,000. It is estimated that during this period 11 million measles death were averted globally as a result of measles control activities (Dabbagh, Patel, Dumolard, Gacic-Dobo, Mulders, Okwo-Bele, & Goodson 2017). In 2006, global coverage of three doses of Diphtheria-Pertussis-Tetanus (DPT) combination vaccine was 81% increase rising from 20% that was earlier recorded in 1980 (Burton, Monasch, Lautenbach, Gacic-Dobo, Neill, Karimov & Birmingham, 2009). In United State of America, Orestein who served as the head of national program on immunization commented that one of the proudest achievements was elimination of endemic measles in the United States.

The coverage of routine childhood immunization is still low in Northern Nigeria (2018 NDHS). On the other hand, there are few reports of non-acceptance of childhood immunization in South-West Nigeria (Anecdotal report from Irepodun/Ifelodun Local Government, 2019). However, Ozawa, Zhou, Wonodi, Chen, and Bridges (2018), submitted that local authorities and international partners have been working hard to improve coverage but population preferences for interventions have not been documented.

Several socio-demographic factors such as age, number of children ever born, education, occupation, religion, cultural belief, marital status, knowledge of immunization practices and ethnicity among others have been identified by some researchers (Okoro, 2015; Lakew, 2015) to greatly influence acceptability and utilization of immunization practices in Nigeria. However, there is dearth of information on the influence of the above mentioned factors on the Ebira people in Nigeria, hence the study.

1.2 Statement of the Problem

Despite advances in fighting childhood illnesses, infectious diseases remain a leading cause of death for children under the age of 5, particularly in sub-Saharan Africa and Southern Asia (UNICEF, 2019).

There has been a progressive decrease in child mortality between 2000-2018 compared to 1990s, according to UNICEF report for the year 2019, 1 in 26 children died before the age of 5 in 2018 compared to 1

in 11 children's death before age 5 in 1990, with the reduction in the global under 5 mortality rate increasing from 2.0% in 1990-2000 to 3.8% in 2000-2018. Despite the global progress in reduction of child mortality over the past decade, death in children of under 5 is estimated to be 5.3 million in 2018 with half of those deaths occurring in sub Saharan Africa where Nigeria is situated (United Nations Inter-agency Group for Child Mortality Estimation, 2019). According to 2018 NDHS survey, the under-5 mortality rate was 132 deaths per 1,000 live births. This implies that more than 1 in 8 children in Nigeria die before their 5th birthday

Though, there is an appreciable increase in the proportion of women who received all basic vaccination for their children in Nigeria (proportion of fully immunized children rose from 13% in 2003 to 23% in 2008, also 25% in 2013 and now 31% in 2018), based on the 2018 National Demographic and Health Survey, however, there are variations regionally. The proportion of Ekiti women who had received all basic vaccines for their children is low compared to other women in Southwest Nigeria such as Lagos and Ondo States, has shown according to the statistics, Ekiti has 26.8% while Lagos recorded 56.2% which twice more than the rates for Ekiti while Ondo State recorded 39.7% (2018, NDHS). There is a need to establish certain factors influencing the acceptability and utilization of basic vaccination in Ekiti state.

A report from Ekiti State Primary Health Agency about refusal of routine vaccination by Ebira mothers in Ado local government in the year 2017, in view of this some local government also reported measles outbreak (Ilejemeje, Ikere, Emure and Ekiti South-West local government) which is a threat to the life of other children within the community. Likewise, in 2019 Ilejemeje, Ikere and Emure local government also reported measles outbreak, in 2020 too Ekiti South West had reported measles outbreak (Ajimati, 2020).

An anecdotal report from NIPDS of OPV2 2019 conducted in an Ebira settlement in Ekiti State showed that a reasonable number of Ebira mothers did not accept and utilize immunization for their grown up children. Despite the fact that a lot of studies have been carried out on the utilization and coverage of immunization in different communities, there is dearth of information on the reasons for these hence this study addresses the factors influencing the acceptance and utilization of childhood immunization among Ebira people in Ado Ekiti.

Several factors such as education, marital status, residence, ethnicity, occupation, religion, cultural beliefs among others have been established by various researchers such as Rahman & Nasrin, 2010; Antai, 2012; NPC, 2013) among others to greatly influence the acceptability and utilization of vaccine for their children. However, these studies were conducted by international researchers. There remains a dearth of knowledge on the existing factors that are associated with the acceptance of childhood immunization. To this end, this current study added to the body of existing literature by establishing the relationship between the above mentioned factors and acceptability of vaccines in Ekiti.

Objective of the study

- i. assess the level of mother's acceptance about routine immunization among Ebira people
- ii. determine socio-demographic factors (income, education, place of birth, husband support) influencing acceptance of routine immunization.

II. Material and Methods

This chapter introduces the method and procedures that was used in this study and it include the research design, research setting, population, sample and sampling technique, instrumentation, validity and reliability of the instruments, data collection procedure, method of data analysis and ethical consideration.

Study design: This study is a descriptive research. Therefore, it adopted a cross-sectional research design to determine the factors influencing the acceptance and utilization of routine immunization among Ebira people in selected areas of Ado Ekiti, Ekiti State, Nigeria. The research method involves the use of semi-structure questionnaire design to obtain data from Ebira mothers.

Study Location: The study focused on mothers who have children of two years or below in the selected Ebira communities of Ado Local Government. The selected communities are Erifun, Ukewo and Ago-corner communities, along Federal Polytechnic road, Ado Ekiti.

Study Duration: 3 months

Sample size: 362

Sample size calculation: A Fischer's formular using a cross sectional sample size computation was used for this study. The sample size computation is shown below:

The formula is:

$$n = \frac{NZ^2pq}{d^2(N-1) + Z^2pq}$$

where:

n = sample size

N = Total number of mothers (N= 2287)

Z = 95% Confidence Interval (Z = 1.96),

p = 0.5,

q = 1 – p

d = degree of accuracy or estimation (d = 0.05)

Therefore:

$$n = \frac{2287 (1.96)^2 (0.5) (0.5)}{(0.05)^2 (1275 - 1) + (1.96)^2 (0.5) (0.5)} = 329.03$$

Because of attrition 10% of the calculated sample will be added which is

329.03 x 10%

329.03 x 0.1 = 32.903

329.03 + 32.903 = 361.933

Therefore 362 were used as the number of respondents.

To this end a total number of three hundred and sixty two (362) respondents were selected for this study.

Subject and selection method:

- i. **Inclusion criteria:** Egbira mothers with children of two years and below in the selected communities and can communicate frequently in Yoruba language.
- ii. Mothers of children less than two years old, who have stayed for at least 2 years within the selected community.
- iii. Mothers between the age of 15-49 years.

Procedure methodology

The quantitative data was gathered using a semi-structured questionnaire among the eligible respondents. The instrument was sectionalized to capture the study objectives. Prior to the collection of data, there was a joint training of three nursing students as a field assistant on how to personally administer the instruments.

Furthermore, the researcher trained the field assistance capacity in order to have good understanding of the study and how to administer the questionnaire. The reason for engaging professional and experienced researchers is to enhance data quality. However the researcher anticipated errors of omission, inconsistencies and incomplete record from the interviewees. In view of this, the researcher added a 10% non-response rate in addition to the estimated sample size to offset any case of incomplete records or errors committed by interviewers during data collection. Letter of introduction of the research work was secured from the Babcock University Health Research Committee, through the Head of Department of Nursing, Babcock University, Ilishan Remo, Ogun State. Ethical clearance was also obtained from the Ministry of Health, Ekiti State in order to grant permission to get the data. Respondents who met the criteria were approached individually and given full information about the procedure after introduction has been done, their informed consent were obtained. Filling the questionnaire took like ten to fifteen minutes, any of the respondents who could not read or write was dictated to and pick her preferred response.

Statistical analysis

Two levels (univariate and bivariate) of data analyses was done to achieve the study objectives. At the univariate level, frequency counts and percentage distribution of socio-demographic characteristics was achieved. At the bivariate level, chi-square test was done to establish the association between two categorical variables. In this study, the data analysis tools that would be adopted include descriptive and inferential statistics. Descriptive statistics of frequency distribution mean and standard deviation was used to analyze the data and provide answers to the research questions 1, 2, 3, and 4. Chi-square test was used to achieve the study hypothesis at 5% level of significance ($\alpha = 0.05$) using the SPSS software version 21.

III. Result

This chapter shows the findings from the study. The socio-demographic variables were reported with frequency distributions in percentages. These socio-demographic characteristics include age, sex, religion, education, marital status, parity and place of birth. The result of bivariate analysis which showed the associations between two categorical variables which among other include, the influence of socio-demographic factors on the utilization of child immunization. It also analyzed the association between socio factors and acceptability of child immunization.

Table 4.1 Socio-demographic Characteristics of Respondents

Socio-demographic Characteristics of Respondents	Frequency (N=361)	Percent (%)
Age		
15-19	3	0.8
20-24	71	19.7
25-29	90	24.9
30-34	89	24.7
35-39	49	13.6
40-44	37	10.2
45-49	22	6.1
Mean age, SD (30.84; 7.241)		
Marital status		
Single	21	5.8
Married	319	88.4
Widowed	4	1.1
Separated	17	4.7
Religion		
Christian	55	15.2
Islam	306	84.8
Education		
No formal education	52	14.4
Primary	131	36.3
Secondary	165	45.7
Tertiary	13	3.6
Number of Parity		
1-2	172	47.6
3-4	133	36.8
5 and above	56	15.5
Place of Birth		
Health Centre	111	30.7
Hospital	147	40.7
Church	20	5.5
Home	71	19.7
Others	12	3.3

Table 4.1 shows the distribution of respondents by their socio-demographic characteristics. Respondents whose ages were 25-29 (24.9%) and 30-34 (24.7%) constituted the greatest proportion. This was the most active years for women of childbearing to have children, with lot of will and at will. The age categories 15-24 years were likely to be in school while those above 35 years were likely to have stopped bearing children because of the risk involved when considering child birth. The least age of mothers was 15 years while the oldest mother was 49 years as at the time of survey. The mean age and standard deviation of the respondents were 30.8 and 7.2 years respectively.

Marital status was another variable of respondents considered in this survey. The distributions showed that majority (88%) of respondents was married and livings with their spouses while a very few is relative (1%) were widowed. More than 8 in 10 (85%) of the respondents were Islam. Respondents with secondary education (46%) were the greatest while only few (4%) had tertiary education. It was further noted from the table that nearly half (48%) of respondents had one or two children, followed by those who had 3-4 children (37%), then those with five or more children (16%). The likely reason for lesser children among the respondents could be as a result of wide uptake of family planning services. It is also important to note that more than 2 in 5 (41%) respondents gave birth in the hospital while a few respondents either gave birth in church (6%) or other places (3%).

Table 4.2 Distribution of Respondents by Level of Acceptability of Routine Immunization

	Frequency (N=357)	Percent (%)
*Possession of card for vaccinations		
Yes	352	97.5
No	5	2.5
*Immunization of Child after birth		
Yes	345	96.6
No	12	3.4
*Child taken vaccine in next appointment after first dose		
Yes	350	98.0
No	7	2.0
*Husband's support of Children's immunization		
Yes	343	96.0

No	14	4.0
*Vaccination not recorded on card		
Yes	204	57.1
No	153	42.9

*This analysis is based on those who have ever heard about vaccination programme

Table 4.3 focuses on the level of acceptability of child immunization. More respondents (98%) had the immunization card. In the same vein, virtually all (97%) accepted that immunization should be given to a child after birth. Many respondents equally accepted that child should take vaccine in next appointment after the first dose. More husbands (96%) of respondents (96%) were in support of children’s immunization. It was recorded that majority (57%) did not get their child immunization recorded on cards. A substantial number (97%) had ever vaccinated their children to prevent diseases.

Table 4.5 Cross tabulation showing the Association between Socio-factors and Acceptability of Routine Vaccination

	Child Immunization Acceptability		Total (N=361)	χ^2	p-value
	Yes (n=345)	No (n=16)			
Health Centre is close to your house					
Yes	260 (72.0%)	13 (3.6%)	273 (75.6%)	0.288	0.592
No	85 (23.5%)	3 (0.8%)	88 (24.4%)		
Availability of public transport to health facility					
Yes	341 (94.5%)	16 (4.4%)	357 (98.9%)	0.188	0.665
No	4 (1.1%)	0 (0.0%)	4 (1.1%)		
Proximity of home from government hospital or health Centre					
Very close	46 (12.7%)	6 (1.7%)	52 (14.4%)	8.624	0.071
Close	111 (30.7%)	5 (1.4%)	116 (32.1%)		
Far but I can walk there	64 (17.7%)	3 (0.8%)	67 (18.6%)		
Far, need to use a car or bike	122 (33.8%)	2 (0.6%)	124 (34.3%)		
Very far	2 (0.6%)	0 (0.0%)	2 (0.6%)		
Place of Birth					
Health Centre	107 (29.6%)	4 (1.1%)	111 (30.7%)	15.307	0.004*
Hospital	144 (39.9%)	4 (0.8%)	147 (40.7%)		
Church	19 (5.3%)	1 (0.3%)	20 (5.5%)		
Home/TBA	66 (18.3%)	5 (1.4%)	71 (19.7%)		
Others	9 (2.5%)	3 (0.8%)	12 (3.3%)		
Husband in support on immunization					
Yes	271 (90.6%)	9 (3.0%)	280 (93.6%)	39.726	0.000**
No	12 (4.0%)	7 (2.3%)	19 (6.4%)		
Knowledgeable about immunization availability at all health Centre					
Yes	322 (92.5%)	14 (4.0%)	336 (96.6%)	4.127	0.042***
No	10 (2.9%)	2 (0.6%)	12 (3.4%)		

Significant: *p<0.01, **p<0.001, ***p<0.05

Table 4.5 depicts certain factors influencing immunization acceptability. Majority (41%) of respondents had their children in hospital, followed by health centre (31%), home (20%) and other places (3%). Moreover, majority (97%) knew that child immunization is always available at the health centre. It was further observed that of all the factors analyzed to influence child immunization acceptability, place of birth ($\chi^2=15.307$, p=0.004), non-support of husbands on immunization ($\chi^2=39.726$, p=0.000) and knowledge of child immunization at health centre ($\chi^2=4.127$, p=0.042) were the only factors significantly associated with immunization acceptability in this study.

IV. Discussion of findings

The findings were discussed under five sub-headings based on the study’s objectives. The first objective focused on the level of awareness about routine immunization. The second objective centered on the level of acceptance of routine immunization among the respondents. The third examined the association between social factors on utilization of routine immunization; the fourth objective tried to determine factors responsible for non-acceptability of immunization and the last determine in-depth knowledge of mothers on reason for incomplete immunization schedule.

Level of Acceptance of Routine Immunization among the Respondents

This study found that a sizeable number of respondents accepted child routine immunization. Many of the mothers possess immunization card and they made their children available for vaccine in the next appointment after first dose. The likely reason for this could be traceable to the support of their spouses in immunizing their children. Wide coverage of awareness campaign on immunization by the government at all level, appear to increase the level of acceptability of child immunization.

The current findings are in line and not far from what Aliyu, Mohammed, Ibrahim, and Ghidazuka (2019) affirmed in their study. Their study focused on determining the acceptance and willingness to complete immunization of children by caregivers attending the pediatric outpatient clinic of Aminu Kano Teaching Hospital, Kano, Nigeria. Their study found that all respondents were aware of the childhood immunization program and were willing to accept all vaccines for their children.

Determine Factors Responsible for Acceptability of Child Immunization

The finding from this study revealed that place of birth of children, support from husbands and knowledge of mothers about immunization availability at all health centres are factors influencing the acceptability of child immunization. The finding of Babalola (2009) corroborated and supported with this present study. The study examined the relative contribution of child's characteristics, mother's attributes, household profiles and community factors on the probability that a child will receive the full series of diphtheria-pertussis-tetanus vaccines (DPT3) as a proxy for full immunization. The study revealed that the most significant predictors of the uptake of DPTs are found at multiple levels which include child's place of birth, presence of immunization card, mother's ideation, mother's decision-making power and perceived social approval of immunization.

V. Conclusion

This study concludes on high level of awareness and knowledge about routine immunization among Ebira mothers in the communities where the study was conducted. It is also concluded that more mothers accepted routine immunization. Social factor such as the place of birth where children are delivered is associated with the utilization of child immunization. Again, place of birth, husbands' support and knowledge of mothers about immunization availability at various health facilities are associated factors of child routine immunization. This study also infer that mothers travels, forgetfulness of immunization appointment date, proximity from mothers' home to health facilities and support coming from the husbands are the major reasons mentioned by Ebira mothers to deter schedule of immunization effectiveness.

References

- [1]. Ajimati C.A (2020). Ekiti state immunization officer. Personal communication.
- [2]. Aliyu, I., Mohammed, A., Ibrahim, H. U., & Ghidazuka, Y. B. (2019). Acceptance of immunization by caregivers of children attending a tertiary health facility in Northwestern Nigeria. *Acta Medica International*, 6(1), 17.
- [3]. Antai, D. (2012). Gender inequities, relationship power, and childhood immunization uptake in Nigeria: a population-based cross-sectional study. *International Journal of Infectious Diseases*, 16(2), e136-e145.
- [4]. Babalola, S. (2009). Determinants of the uptake of the full dose of Diphtheria–Pertussis–Tetanus vaccines (DPT3) in northern Nigeria: a multilevel analysis. *Maternal and child health journal*, 13(4), 550-558.
- [5]. Burton, A., Monasch, R., Lautenbach, B., Gacic-Dobo, M., Neill, M., Karimov, R., Birmingham, M. (2009). WHO and UNICEF estimates of national infant immunization coverage: methods and processes. *Bulletin of the World Health Organization*, 87, 535-541.
- [6]. Buse, K., & Hawkes, S. (2015). Health in the sustainable development goals: ready for a paradigm shift? *Globalization and health*, 11(1), 13.
- [7]. Dabbagh, A., Patel, M. K., Dumolard, L., Gacic-Dobo, M., Mulders, M. N., Okwo-Bele, J.-M., Goodson, J. L. (2017). Progress toward regional measles elimination—worldwide, 2000–2016. *MMWR. Morbidity and mortality weekly report*, 66(42), 1148.
- [8]. Frieden, T. R. (2010). A framework for public health action: the health impact pyramid. *American journal of public health*, 100(4), 590-595.
- [9]. Lakew, Y., Bekele, A., & Biadgilign, S. (2015). Factors influencing full immunization coverage among 12–23 months of age children in Ethiopia: evidence from the national demographic and health survey in 2011. *BMC public health*, 15(1), 728.
- [10]. Loharikar, A., Mantel, C., Burgess, C., Iskander, J. K., Thorpe, P., & Laird, S. (2018). Global introduction of new vaccines: delivering more to more.
- [11]. National Population Commission (NPC) [Nigeria] and ICF International. 2009. *Nigeria Demographic and Health Survey 2008*. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International.
- [12]. National Population Commission (NPC) [Nigeria] and ICF International. 2014. *Nigeria Demographic and Health Survey 2013*. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International.
- [13]. National Population Commission (NPC) [Nigeria] and ICF. 2019. *Nigeria Demographic and Health Survey 2018*. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF.
- [14]. Ogundeji, M.O., Adeniyi, J.D., Osungbadin, K.O., Arulogun, O.S., (2014). Primary health care in Nigeria: History and Development. Ibadan University press.
- [15]. Okoro, J. C., Ojinnaka, N. C., Ikefuna, A. N., & Onyenwe, N. E. (2015). Sociodemographic influences on immunization of children with chronic neurological disorders in Enugu, Nigeria. *Trials in Vaccinology*, 4, 9-13.

- [16]. Oleribe, O., Kumar, V., Awosika-Olumo, A., & Taylor-Robinson, S. D. (2017). Individual and socioeconomic factors associated with childhood immunization coverage in Nigeria. *The Pan African medical journal*, 26.
- [17]. Ozawa, S., Zhou, M., Wonodi, C., Chen, H.-H., & Bridges, J. F. (2018). Parents' preferences for interventions to improve childhood immunization uptake in northern Nigeria. *Vaccine*, 36(20), 2833-2841.
- [18]. Rahman, M., & Obaida-Nasrin, S. (2010). Factors affecting acceptance of complete immunization coverage of children under five years in rural Bangladesh. *Salud pública de México*, 52(2), 134-140.
- [19]. Tagbo, B., Uleanya, N., Nwokoye, I., Eze, J., & Omotowo, I. (2012). Mothers' knowledge, perception and practice of childhood immunization in Enugu. *Nigerian Journal of paediatrics*, 39(3), 90-96.
- [20]. Unicef (2017). Child Mortality Report. Adapted from <https://www.unicef.org>> *Child Mortality Report 2017*.
- [21]. Unicef (2019). Under-five mortality. Retrieved from <https://data.unicef.org/topic/child-survival/under-five-mortality/>.
- [22]. Unicef (2019). Levels & Trends in Estimates developed by the UN Inter-agency Group for Child Mortality Estimation United Nations. Retrieved from <https://www.unicef.org/media/60561/file/UN-IGME-child-mortality-report-2019.pdf>
- [23]. WHO. (2002). "Endgame" issues for the global polio eradication initiative. *Clinical Infectious Diseases*, 34(1), 72-77. <https://doi.org/10.1086/338262>
- [24]. WHO (2015). 1 in 5 children in Africa do not have access to life saving vaccines. Retrieved from <https://www.afro.who.int/en/media-centre/afro-feature/item/7620-1-in-5-children-in-africa-do-not-have-access-to-life-saving-vaccines.html>
- [25]. WHO (2019). Health topic: Immunization. Retrieved from <https://www.who.int/topics/immunization/en/>

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